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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,407	05/11/2005	Kotaro Yano	Q72882	4491

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EXAMINER
HANOR, SERENA L

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,407	YANO ET AL.	
	Examiner	Art Unit	
	SERENA L. HANOR	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-23* is/are pending in the application.

4a) Of the above claim(s) *9-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

i. Claims 1 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Hu et al. (Synthesis of tree-like carbon nanotubes with multijunction by a catalytic chemical vapor deposition method).

Hu et al. disclose a vapor grown carbon fiber, wherein each fiber has a branching degree of at least 0.15 occurrences/micron (Figure 2). The diameter of the fiber is 1-500 nm (p. 75 lines 24-25).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113 [R-1]. *Applicants' claims 7 and 8.*

ii. Claims 1, 2 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Morita et al. (U.S. Patent No. 7,122,132 B2).

Morita et al. disclose a vapor grown carbon fiber, wherein each fiber has a branching degree of at least 0.15 occurrences/micron, in an amount of at least 10 mass% (Figure 2, col. 4 lines 43-47, *Applicants' claims 1 and 2*). When the fiber is compressed so as to have a bulk density of 0.8 g/cm^3, it has a specific resistance of 0.025 Ωcm or less (col. 4 lines 28-30 and lines 56-59, col. , *Applicants' claim 5*). The diameter of the fiber is 1-500 nm (col. 4 lines 26-27, *Applicants' claim 6*). The fiber is produced by feeding a raw material solution containing a carbon source and a transition metallic compound into a reaction zone through spraying at a spray angle of 3-30°, while feeding a carrier gas through at least one site other than an inlet through which the raw material solution is sprayed, and subjecting the raw material solution to thermal decomposition (col. 4 lines 60-col. 5 line 3, col. 8 lines 14-27, col. 8 line 51-col. 9 line 26, *Applicants' claims 7 and 8*).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113 [R-1]. *Applicants' claims 7 and 8.*

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

i. Claims 1, 2 and 4-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishimura et al. (WO 00/58536, using U.S. Patent No. 6,489,026 B1 as the English translation).

Nishimura et al. disclose a vapor grown carbon fiber with a bulk density of 0.025 g/cm^3 or less (col. 7 lines 45-47, *Applicants' claim 4*). When the fiber is compressed so as to have a bulk density of 0.8 g/cm^3, it has a specific resistance of 0.025 Ωcm or less (col. 4 lines 18-21, *Applicants' claim 5*). The diameter of the fiber is 100-200 nm (col. 4 lines 15-17, *Applicants' claim 6*).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113 [R-1]. *Applicants' claims 7 and 8.*

Nishimura et al. differs from the instant in that it does not disclose the carbon fiber as having a branching degree of at least 0.15 occurrences/micron in an amount of at least 10 mass%.

It would have been obvious to one of ordinary skill in the art at the time of the invention to **have recognized** that the product of Nishimura et al. *would have a similar branching degree in an amount of at least 10 mass%* **because** it is used to enhance electrical conductivity (Nishimura et al. col. 11 lines 22-28), and the Applicants' specification (p. 18 lines 14-21) recites the carbon fibers with a branching degree of 0.15 occurrences/micron as being used to enhance electrical conductivity and that from the viewpoint of enhancement of electrical conductivity, the carbon fiber contains carbon fiber filaments having such a branching degree in an amount of 10 mass% or more. "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). See MPEP 2112 [R-3] I.

ii. Claims 1, 2 and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Endo et al. (Vapor-grown carbon fibers (VGCFs) Basic Properties and their battery applications).

Endo et al. (Vapor-grown carbon fibers (VGCFs) Basic properties and their battery applications) disclose a vapor grown carbon fiber, wherein each fiber has a branching degree of at least 0.15 occurrences/micron (p. 1295 Figure 14b, lower right quadrant, *Applicants' claims 1 and 2*). The fiber has a bulk density of 0.025 g/cm^3 or

less (p. 1289 Table 1, p. 1289 col. 1, *Applicants' claim 4*). When the fiber is compressed so as to have a bulk density of 0.8 g/cm^3, it has a specific resistance of 0.025 Ωcm or less (p. 1292 Figure 7, *Applicants' claim 5*). The diameter of the fiber is 100-200 nm (p. 1287 col. 2, *Applicants' claim 6*).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113 [R-1]. *Applicants' claims 7 and 8.*

Endo et al. differs from the instant in that it does not disclose the branching degree (of at least 0.15 occurrences/micron) as being in an amount of at least 10 mass%.

It would have been obvious to one of ordinary skill in the art at the time of the invention to **have recognized** that the product of Endo et al. *would have a branching degree in an amount of at least 10 mass%* **because** it is used to enhance electrical conductivity (Endo et al. p. 1290 col. 2), and the Applicants' specification (p. 18 lines 14-21) recites the carbon fibers with a branching degree of 0.15 occurrences/micron as being used to enhance electrical conductivity and that from the viewpoint of enhancement of electrical conductivity, the carbon fiber contains carbon fiber filaments having such a branching degree in an amount of 10 mass% or more. "[T]he discovery

of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). See MPEP 2112 [R-3] I.

iii. Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by K. Lozano. (Vapor-Grown Carbon-Fiber Composites: Processing and Electrostatic Dissipative Applications).

K. Lozano (Vapor-Grown Carbon-Fiber Composites: Processing and Electrostatic Dissipative Applications) disclose a vapor grown carbon fiber, wherein each fiber has a branching degree of at least 0.15 occurrences/micron (p. 34 Figure 1a, *Applicants' claims 1 and 2*). The diameter of the fiber is 100-200 nm (p. 34 col. 1, p. 35 col. 2, *Applicants' claim 6*).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113 [R-1]. *Applicants' claims 7 and 8.*

K. Lozano differs from the instant in that it does not disclose the branching degree (of at least 0.15 occurrences/micron) as being in an amount of at least 10 mass%.

It would have been obvious to one of ordinary skill in the art at the time of the invention to **have recognized** that the product of K. Lozano. *would have a similar branching degree* **because** it is used to enhance electrical conductivity (K. Lozano p. 34), and the Applicants' specification (p. 18 lines 14-21) recites the carbon fibers with a branching degree of 0.15 occurrences/micron as being used to enhance electrical conductivity and that from the viewpoint of enhancement of electrical conductivity, the carbon fiber contains carbon fiber filaments having such a branching degree in an amount of 10 mass% or more. "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). See MPEP 2112 [R-3] I.

Conclusion

Claims 1, 2 and 4-8 have been rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SERENA L. HANOR whose telephone number is (571)270-3593. The examiner can normally be reached on Monday - Thursday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SLH

/Timothy C Vanoy/
Primary Examiner, Art Unit 1793